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APPLICATION NUMBER: *60/501,894*
FILING DATE: *September 09, 2003*
RELATED PCT APPLICATION NUMBER: *PCT/US04/29522*

Certified by

Jon W Dudas

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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

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15535 U.S. PTO
60/501894
09/09/03

INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
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☐ *Additional inventors are being named on the _____ separately numbered sheets attached hereto*

TITLE OF THE INVENTION (280 characters max)

ACTIVE PULL-UP

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ENCLOSED APPLICATION PARTS *(check all that apply)*

☒ Specification *Number of Pages* 1 ☐ CD(s), Number [ ]

☒ Drawing(s) *Number of Sheets* 1 ☐ Other (specify) [ ]

☐ Application Data Sheet. See 37 CFR 1.76

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT *(check one)*

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check or money order is enclosed to cover the filing fees

FILING FEE AMOUNT ($)

☒ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 07-0832 — 160

☐ Payment by credit card. Form PTO-2038 is attached.

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: _____.

Respectfully submitted,

SIGNATURE [signature]

Date 9/9/03

TYPED or PRINTED NAME Brian J. Cromarty

REGISTRATION NO. *(if appropriate)* see attached

Docket Number: PU030268

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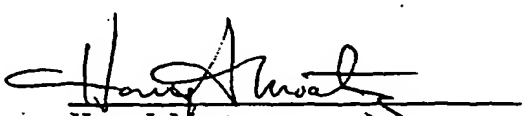

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Active Pull-up

The DM3 design includes a feature to allow EEPROM reads and writes without powering the entire board. In this mode, an external device (Chipper Check for instance) will power the EEPROM only. However, without power to the entire DM3, the pull-ups on the I2C lines will effectively become pull-downs.

This problem is addressed by the current invention which electrically disconnects the pull-ups when there is no power to the DM3. Figure 1 shows a schematic of an embodiment of the invention. The external device would then provide the pull-ups

When 5V and 3.3V are supplied by the DM3, this circuit provides the required pull-up through the collector-emitter of the transistor. Connecting the base of the transistor to 5V ensures the transistor is always saturated and therefore the drop from collector to emitter is only about 0.2V.

When the DM3 is not powered, the 5V and 3.3V connections are essentially at ground. This causes the base-emitter of the transistor to be reverse biased when an external pull-up is used. The reverse bias of the base-emitter electrically disconnects the I2C line from the DM3 supply.

This invention is not restricted to I2C lines. It can be used for any line that requires isolation from a pull-up when power is not supplied.

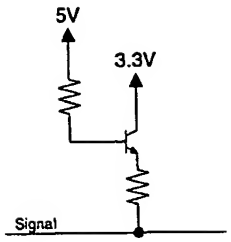

Figure 1. Active pull-up schematic.

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